



Skin Complications from Soap and Cream Use among Elderly Persons in the University of Port Harcourt Teaching Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

Editor(s):

(1) Dr. Giuseppe Murdaca, University of Genova, Italy.

Reviewers:

(1) Guilherme Muzy, Faculdade de Ciências Médicas do ABC, Brazil.

(2) Bahareh Malekafzali, Azad University Medical Branch, Iran.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/68266>

Original Research Article

Received 20 February 2021

Accepted 27 April 2021

Published 28 April 2021

ABSTRACT

Background: The components of skin care products (soaps and creams) are left on the skin for extended periods of time. It has however been observed in most of the dermatology clinics in our environment that the frequent use of toilet or medicated germicidal soaps on diseased skin increases the inflammation and irritation of the skin

Methods: This was a cross-sectional descriptive study of 126 elderly respondents who presented at different wards of the University of Port Harcourt Teaching Hospital. A PROFORMA data collection sheet was used to collate demographic information, dermatological complications, and the use of soaps and creams from the participants.

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Results: Xerosis was the most common skin complication (54.64%), followed by itching (27.84%) and post bleaching-syndrome (17.53%). The most commonly used was moisturizing cream (32.8%) followed by bleaching cream (16.0%). However, 49 (39.2%) of the participants indicated they did not use any specific cream and 15 (12.0%) indicated that they did not use any cream. The distribution of types of cream and gender was not statistically significant ($p = 0.439$). The distribution of bathing soap used by the participants showed that the most common bathing soap was moisturizing/toilet soap (54.4%), followed by the use of no specific soap (25.6%) and medicated/bleaching soap (19.2%). The distribution of postbleaching syndrome was significantly associated with a relatively high use of bleaching/ medicated soaps by 47.1% of the persons with post-bleaching syndrome. ($p = 0.024$). The distribution of postbleaching syndrome and gender was found to be statistically significant ($p = 0.042$), with the post-bleaching syndrome been more common among female participants (64.7%).

Conclusion: There was a considerable occurrence of post bleaching syndrome among the participants. In a bid to improve skin care among the elderly, it is important that the geriatric population are educated on the appropriate applications of skin care products for an improved quality of life.

Keywords: Soaps; cream; elderly; complications.

1. INTRODUCTION

As an important aspect of self-care among older persons, bathing serves the physiological purpose of cleaning away accumulated waste materials and dead skin that might otherwise lead to dull complexion. It also serves the social purpose of maintaining an acceptable standard of cleanliness and provides individuals the opportunity to revive and refresh through the washing process. As skin ages, the epidermis and dermis become thinner and flatter and the skin's mechanical strength declines [1,2]. There is a reduction in the number of cutaneous blood vessels and nerve endings, and in the amount of connective tissue, which contains collagen and elastin [3,4]. The skin has a decreased ability to retain moisture, to control temperature and to sense the surrounding environment [5,6]. Environmental factors, such as exposure to UV radiation, also have a detrimental effect on skin health over time.

Consequences from the continuous use of alkaline cleansers for bathing may have gone unnoticed in the healthy population as the skin is able to repair itself quickly. The impact of the high humidity, in the tropical climate, on skin dryness is also unknown. However, the overall effect of alkaline soaps in our environment, especially among elderly persons is yet to be studied. Previous studies had reported that the pigmented skin had a more acidic surface, superior stratum corneum integrity and barrier function, which was attributed to the increased epidermal lipid content and lamellar body density [3,7,8]. The more acidic surface of the dark skin

has been attributed to the pH lowering impact of melanin. The lower serine protease activity found in the more acidic environment of the pigmented skin may contribute to the stability of the stratum corneum in healthy individuals despite the use of alkaline soaps [4,9,10]. The use of herb-containing black soap and medicated germicidal soaps for bathing is a common response to the onset of a rash in this environment. Components from soaps and creams are left on the skin for extended periods of time. It has however been observed in most of the dermatology clinics in our environment that the frequent use of toilet or medicated germicidal soaps on diseased skin increases the inflammation and irritation of the skin [2,10,11]. The paucity of data on the preferences and goals of older persons regarding bathing and skin care creams in the local setting. The study was carried out to assess the association of soap and cream use with the occurrence of skin complications among elderly persons in the University of Port Harcourt Teaching Hospital.

2. METHODS

2.1 Study Area

The study was carried out in the University of Port Harcourt Teaching Hospital (UPTH). The hospital is a 700-bed tertiary hospital located in Port Harcourt, Rivers state, Nigeria. The hospital plays host to a variety of medical specialists and serves as a referral center for other health care facilities in the state and neighbouring states as well.

2.2 Study Population

The study population included individuals aged 60 years and above presenting to UPTH for medical attention and are admitted to the wards after presentation.

2.3 Sample and Sampling

A purposive cross-sectional sampling of 126 elderly patients that were admitted to the different wards of the hospital within a 3-month period was carried out.

2.4 Data Collection

A PROFORMA data collection sheet was used to collate demographic information, dermatological conditions, soap use and cream use from the subjects.

2.5 Data Analysis

The data collected was analysed using the SPSS v25 software at a 95% confidence interval and a p-value less than 0.05 was considered significant. The demographic characteristics and dermatological distributions were presented using frequencies and percentages. The association of dermatological lesions with gender and chronic illnesses was assessed using the Chi-square statistics.

3. RESULTS

Fig. 1 shows a 77.0% prevalence of skin complications among the study participants.

Fig. 2 shows the distribution of diagnosed skin complications. Xerosis was the most common skin complication (54.64%), followed by itching (27.84%) and post bleaching-syndrome (17.53%).

Table 2 shows the body creams and lotions used by the participants in the study. The most commonly used was moisturizing cream (32.8%) followed by bleaching cream (16.0%). However, 49 (39.2%) of the participants indicated they did not use any specific cream and 15 (12.0%) indicated that they did not use any cream. The distribution of types of cream and gender was not statistically significant ($p = 0.439$). The distribution of bathing soap used by the participants showed that the most common bathing soap was moisturizing/toilet soap (54.4%), followed by the use of no specific soap

(25.6%) and medicated/bleaching soap (19.2%). There was no significant difference in the distribution of the type of soaps used by gender.

Table 3 shows the distribution of classes of soap used and complications. The table shows that the distribution of postbleaching syndrome was significantly associated with a relatively high use of medicated soaps by 47.1% of the persons with post-bleaching syndrome. ($p = 0.024$).

Table 4 shows the association of sex, age group and cream complications. The distribution of postbleaching syndrome and gender was found to be statistically significant ($p = 0.042$), with the post-bleaching syndrome been more common among female participants (64.7%).

4. DISCUSSION

Xerosis was the most common skin complication (54.64%), followed by itching (27.84%) and post bleaching-syndrome (17.53%). The distribution of bathing soap used by the participants showed that the most common bathing soap was moisturizing/toilet soap (54.4%), followed by the use of no specific soap (25.6%) and medicated/bleaching soap (19.2%). There was no significant difference in the distribution of the type of soaps used by gender. This is consistent with reports of similar studies, where the choice of soaps among elderly people tend to vary among individuals, with many adults not having specific preferences and would rather use what was available [10–12]. However, the distribution of postbleaching syndrome was significantly associated with a relatively high use of medicated soaps by 47.1% of the persons with post-bleaching syndrome ($p = 0.024$). This is consistent with reports of similar studies, which reported a considerable association of the use of medicated soaps and the occurrence of post-bleaching syndrome, especially when there is a prolonged use of bleaching creams among the individuals [2,4,9,13]. The general components of the medicated soaps reportedly used by the participants include; soap base, water, fragrance, colour, silicon emulsion antibacterial agent-chloroxylenol. Similarly, the general components of the non-medicated soaps include; sodium palmate, sodium palm kernelate water, glycerin, sodium chloride, fragrance, titanium dioxide, D & C Colors & Tera sodium EDTA [5,6]. Some of these components such as sodium palmate, titanium dioxide, EDTA, chloroxylenol and soap base have been reported to cause mild skin irritations and may trigger allergic reactions in some individuals [7,9]. The combined effects of

these components may have more than a mild may lead to some dermatological irritation to the skin of elderly persons and complications.

Table 1. Sociodemographic distribution of participants

Sociodemographic	Frequency n (%)
Age (N=126)	
60-64 years	36 (28.6)
65- 74 years	46 (36.5)
75-84 years	36 (28.6)
85 and above	8 (6.3)
Sex (N=126)	
Male	73 (57.9)
Female	53 (42.1)
Marital Status (N=126)	
Single	1 (0.8)
Married	90 (71.4)
Widowed	33 (26.2)
Divorced	2 (1.6)
Occupation (N=124)	
Retired	44 (35.5)
Farming/Fishing	25 (19.4)
Trader/Business	19 (15.3)
House wife	11 (8.9)
Mechanic/Technician	4 (3.2)
Security personnel	3 (2.4)
Engineer	2 (1.6)
Medical Doctor	2 (1.6)
Civil Servant	2 (1.6)
Others	12 (9.7)
State of origin (N=125)	
Rivers	65 (52.0)
Imo	18 (14.4)
Delta	16 (12.8)
Abia	8 (6.4)
Akwaibom	6 (4.8)
Bayelsa	2 (1.6)
Kogi	2 (1.6)
Ondo	2 (1.6)
Others	6 (4.8)
Economic dependency(N=126)	
Self	71 (56.3)
Family	50 (39.7)
Both Self&Family	4 (3.2)
Govt/Institution	1 (0.8)
Social/Family Support (N=126)	
Yes	124 (98.4)
No	2 (1.6)
Resident with (N=126)	
Spouse	72 (57.1)
Daughter	21 (16.7)
Son	13 (10.3)
Alone	12 (9.5)
Children	4 (3.2)
Grandson	2 (1.6)
Other relatives	1 (0.8)
Care givers	1 (0.8)

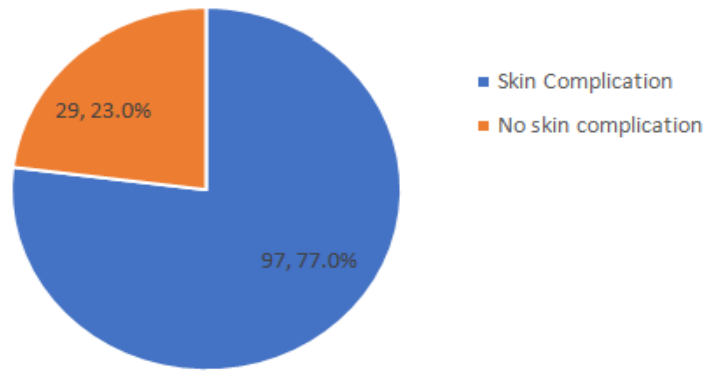


Fig. 1. Prevalence of skin complication

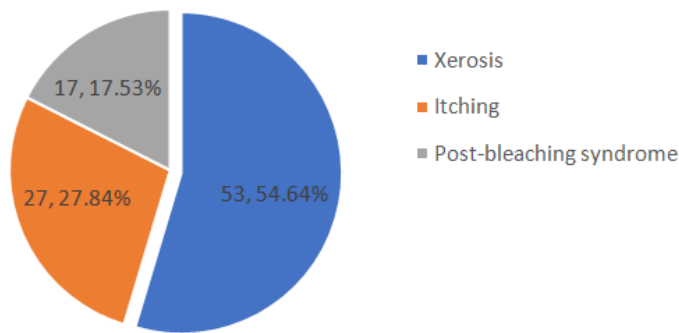


Fig. 2. Distribution of skin complications

Table 2. Types of body creams and lotions used in senior citizens as seen in the study

Type of body cream and soap used	All senior citizens n (%)	Male n (%)	Female n (%)	p-value
Body Cream				
Moisturizing	41 (32.8)	22 (30.6)	19 (35.8)	0.439
Medicated/Bleaching	20 (16.0)	9 (12.5)	11 (20.8)	
No Specific Cream	49 (39.2)	31 (43.1)	18 (34.0)	
None	15 (12.0)	10 (13.9)	5 (9.4)	
Bathing Soap				
Moisturizing/Toilet	68 (54.4)	42 (58.3)	26 (49.1)	0.452
Medicated/Bleaching	24 (19.2)	11 (15.3)	13 (24.5)	
No Specific Soap	32 (25.6)	18 (25.0)	14 (26.4)	
None	1 (0.8)	1 (1.4)	0 (0.0)	

Table 3. Distribution of classes of soap used and complications

Classes of soap	Complications					
	Xerosis		Itching		Post-bleaching syndrome	
	Yes	No	Yes	No	Yes	No
Medicated	11 (20.8)	13 (18.1)	5 (18.5)	19 (18.5)	8 (47.1)	16 (14.8)
Non-medicated/toilet	24 (45.3)	44 (61.1)	13 (48.1)	55 (56.1)	7 (41.2)	61 (56.5)
No specific soap	18 (34.0)	14 (19.4)	9 (33.3)	23 (23.5)	2 (11.8)	30 (27.8)
None	0 (0.0)	1 (1.4)	0 (0.0)	1 (1.0)	0 (0.0)	1 (0.9)
P-values	0.160		0.677		0.024*	

Table 4. Association of sex, age group and cream complications

Age groups (N=126)	Complications					
	Xerosis		Itching		Post-bleaching Syndrome	
	Yes	No	Yes	No	Yes	No
60-64 years	17 (32.1)	19 (26.0)	9 (33.3)	27 (27.3)	6 (35.3)	30 (27.5)
65- 74 years	20 (37.7)	26 (35.6)	11 (40.7)	35 (35.4)	9 (52.9)	37 (33.9)
75-84 years	14 (26.4)	22 (30.1)	5 (18.5)	31 (31.3)	2 (11.8)	34 (31.2)
85 and above	2 (3.8)	6 (8.2)	2 (7.4)	6 (6.1)	0 (0.0)	8 (7.3)
p-value	0.720		0.619		0.191	
Sex (N=126)	33 (62.3)	40 (54.8)	18 (66.7)	55 (55.6)	6 (35.3)	67 (61.5)
Male	20 (37.7)	33 (45.2)	9 (33.3)	44 (44.4)	11 (64.7)	42 (38.5)
Female						
p-value	0.402		0.300		0.042*	

The most commonly used cream was moisturizing cream, followed by bleaching cream. However, the distribution of types of cream and gender was not statistically significant [p = 0.439]. Some authors have identified skin bleaching as a prevalent cultural practice and a normal part of life in some African countries; such studies suggest that skin bleaching is associated with social privilege, marital prospects, attraction to the other sex, and a bandwagon effect [2,5,8,14]. The distribution of postbleaching syndrome and gender was found to be statistically significant. The active ingredients in these cosmetic products are hydroquinone, mercury and corticosteroids. Several additives [concoctions] are used to enhance the bleaching effect. Since these products are used for long duration, on a large body surface area, and under hot humid conditions, percutaneous absorption is enhanced. The complications of these products are very serious and are sometimes fatal [1,5,6]. Some of these complications are exogenous ochronosis, impaired wound healing and wound dehiscence, the fish odor syndrome, nephropathy, steroid addiction syndrome, predisposition to infections, a broad spectrum of cutaneous and endocrinologic complications of corticosteroids, including suppression of hypothalamic-pituitary-adrenal axis [2,9,10]. Both men and women engage in the practice of skin lightening; however, women are generally more likely to engage in the practice than men[10]. For example, in a study carried out by Olumide et al. [15], out of “450 Nigerians who confessed to the use of lightening creams, 73.3% were women, and 27.6% were men”. The high percentage can be compared with other parts of the world where skin bleaching is a notable practice [6,10]. Studies by Adebajo [12] and Ravichandran [16] also pointed out that women are more likely to use skin lightening creams.

5. CONCLUSION

The study showed a considerable prevalence of post bleaching syndrome among the participants. The use of bleaching/ medicated soaps was observed to cause some significant dermatological complications among the participant. However, Xerosis was the most common skin complication reported. In a bid to improve skin care among the elderly, it is important that the geriatric population are educated on the appropriate applications of skin care products for an improved quality of life.

CONSENT AND ETHICAL APPROVAL

Ethical approval to carry out the study was obtained from the Research and Ethics Committee of the University of Port Harcourt Teaching Hospital before commencing the study. A willing written informed consent was obtained from each participant before they were included into the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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